

**COMMONWEALTH OF KENTUCKY**  
**BEFORE THE PUBLIC SERVICE COMMISSION**

In the Matter of:

2019 INTEGRATED RESOURCE PLAN OF EAST ) CASE NO.  
KENTUCKY POWER COOPERATIVE, INC. ) 2019-00096

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**MOTION FOR CONFIDENTIAL TREATMENT**

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Comes now East Kentucky Power Cooperative, Inc. (“EKPC”), by and through counsel, pursuant to KRS 61.878, 807 KAR 5:001, Section 13 and other applicable law, and for its motion requesting that the Kentucky Public Service Commission (“Commission”) afford confidential treatment to a portion of the Responses to Data Requests propounded by Commission Staff, dated April 14, 2020, and the Attorney General (“AG”), dated April 9, 2020, with regard to EKPC’s 2019 Integrated Resource Plan, respectfully states as follows:

1. EKPC is filing its Responses to Data Requests from the aforementioned parties contemporaneously herewith. The Responses include a considerable amount of information that is highly confidential, including:

- a. The year-over-year inflation rate and discount rate assumptions used to calculate key financial metrics; this exact information was contained in EKPC’s 2019 Integrated Resource Plan (AG-DR-01-09) and was granted confidential treatment by the Commission in this case by Order dated November 8, 2019.
- b. Hedging information (Staff-DR-02-06). This response includes information concerning EKPC’s strategies for purchasing and hedging Firm Transmission Rights (“FTRs”) in the PJM auctions that, if disclosed, would tell other bidders

in the market what percentage of EKPC's total FTR needs it intends to purchase in the Long-Term, Annual, Quarterly and Monthly FTR auctions. This information would allow other bidders to manipulate the marketplace by anticipating EKPC's purchasing strategy. Accordingly, the disclosure of this information would be extremely valuable to those who would seek to gain an unfair commercial advantage over EKPC. The information is protected under KRS 61.878(1)(c) and other precedent.

2. Collectively, the information described above is designated as the "Confidential Information" for which protection is sought under KRS 61.878 and other applicable law. Disclosure of the Confidential Information would permit an unfair commercial advantage to third parties to the detriment of EKPC, its Owner-Members and their end-use retail members. If disclosed, the Confidential Information would also give market participants and competitors insights into the anticipated operating costs, resource investment calculations, future year revenue requirements and system average costs.

3. The Kentucky Open Records Act, and specifically KRS 61.878(1)(c)(1), protects "records confidentially disclosed to an agency or required by an agency to be disclosed to it, generally recognized as confidential or proprietary, which if openly disclosed would permit an unfair commercial advantage to competitors of the entity that disclosed the records." Moreover, the Kentucky Supreme Court has stated, "information concerning the inner workings of a corporation is 'generally accepted as confidential or proprietary.'" *Hoy v. Kentucky Industrial Revitalization Authority*, 907 S.W.2d 766, 768 (Ky. 1995). If disclosed, the Confidential Information within the Data Request Responses would give market participants and competitors insights into the hedging strategies of EKPC. In addition, Accordingly, the Confidential

Information satisfies both the statutory and common law standards for affording confidential treatment.

4. The Confidential Information consists of proprietary information that is retained by EKPC on a “need-to-know” basis. The Confidential Information is distributed within EKPC only to those employees who must have access for business reasons and is generally recognized as confidential and proprietary in the energy industry.

5. EKPC does not object to limited disclosure of the Confidential Information, pursuant to an acceptable confidentiality and nondisclosure agreement, to intervenors with a legitimate interest in reviewing same for the sole purpose of participating in this case. EKPC reserves the right to object to providing the Confidential Information to any intervenor if said provision could result in liability or competitive harm to EKPC under any Confidentiality Agreement, Non-Disclosure Agreement or other obligation.

6. In accordance with the provisions of 807 KAR 5:001, Section 13(2), EKPC is filing separately under seal one (1) unredacted copy of the Confidential Information highlighted or otherwise appropriately denoted.

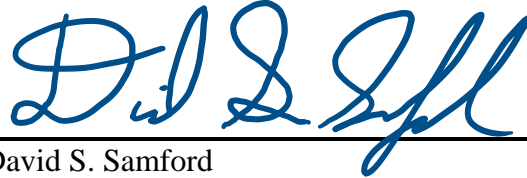
7. In accordance with the provisions of 807 KAR 5:001, Section 13(2), EKPC respectfully requests that the Confidential Information identified in Paragraph 1.a. above be withheld from public disclosure for ten (10) years and the Confidential Information identified in Paragraph 1.b. above be withheld from public disclosure indefinitely.

8. If, and to the extent, the Confidential Information becomes publicly available or otherwise no longer warrants confidential treatment, EKPC will notify the Commission and have its confidential status removed, pursuant to 807 KAR 5:001 Section 13(10).

WHEREFORE, on the basis of the foregoing, EKPC respectfully requests that the Commission classify and protect as confidential the Confidential Information described herein and as set forth above.

This 8<sup>th</sup> day of May 2020.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "David S. Samford", is written over a solid black horizontal line.

David S. Samford  
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*Counsel for East Kentucky Power Cooperative, Inc.*

**CERTIFICATE OF SERVICE**

This is to certify that the foregoing electronic filing is a true and accurate copy of the document being filed in paper medium; that the electronic filing was transmitted to the Commission on May 8, 2020; that there are currently no parties that the Commission has excused from participation by electronic means in this proceeding; and that a copy of the filing in paper medium will be filed with the Commission within thirty days of the current state of emergency for COVID-19 is lifted.

  
\_\_\_\_\_  
*Counsel for East Kentucky Power Cooperative, Inc.*

**COMMONWEALTH OF KENTUCKY**  
**BEFORE THE PUBLIC SERVICE COMMISSION**

**In the Matter of:**

**2019 INTEGRATED RESOURCE PLAN OF EAST  
KENTUCKY POWER COOPERATIVE, INC.**

**) CASE NO.  
) 2019-00096**

**RESPONSES TO ATTORNEY GENERAL'S SUPPLEMENTAL  
DATA REQUESTS TO EAST KENTUCKY POWER COOPERATIVE, INC.**

**DATED APRIL 9, 2020**

**COMMONWEALTH OF KENTUCKY**  
**BEFORE THE PUBLIC SERVICE COMMISSION**

**In the Matter of:**

**2019 INTEGRATED RESOURCE PLAN OF EAST ) CASE NO.**  
**KENTUCKY POWER COOPERATIVE, INC. ) 2019-00096**

**CERTIFICATE**

**STATE OF KENTUCKY )**  
**)**  
**COUNTY OF CLARK )**

Kenneth Bickham, being duly sworn, states that he has supervised the preparation of the responses of East Kentucky Power Cooperative, Inc. to the Attorney General's Supplemental Data Requests in the above-referenced case dated April 9, 2020, and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.

  
\_\_\_\_\_

Subscribed and sworn before me on this 8<sup>th</sup> day of May, 2020.

  
\_\_\_\_\_

Notary Public - #590567  
Commission expires - 11/30/2021

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

2019 INTEGRATED RESOURCE PLAN OF EAST ) CASE NO.  
KENTUCKY POWER COOPERATIVE, INC. ) 2019-00096

CERTIFICATE

STATE OF KENTUCKY )  
 )  
COUNTY OF CLARK )

Mark Brewer, being duly sworn, states that he has supervised the preparation of the responses of East Kentucky Power Cooperative, Inc. to the Attorney General's Supplemental Data Requests in the above-referenced case dated April 9, 2020, and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.



Subscribed and sworn before me on this 8<sup>th</sup> day of May, 2020.



Notary Public - #590567  
Commission expires - 11/30/2021



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<b>KENTUCKY POWER COOPERATIVE, INC.</b>	)	<b>2019-00096</b>

**CERTIFICATE**

**STATE OF KENTUCKY**   )  
  )  
**COUNTY OF CLARK**     )

Mark Horn, being duly sworn, states that he has supervised the preparation of the responses of East Kentucky Power Cooperative, Inc. to the Attorney General’s Supplemental Data Requests in the above-referenced case dated April 9, 2020, and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.

  
\_\_\_\_\_

Subscribed and sworn before me on this 8<sup>th</sup> day of May, 2020.

  
\_\_\_\_\_

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**STATE OF KENTUCKY )**  
**)**  
**COUNTY OF CLARK )**

Craig A. Johnson, being duly sworn, states that he has supervised the preparation of the responses of East Kentucky Power Cooperative, Inc. to the Attorney General's Supplemental Data Requests in the above-referenced case dated April 9, 2020, and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.



Subscribed and sworn before me on this 8<sup>th</sup> day of May, 2020.



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STATE OF KENTUCKY )  
 )  
COUNTY OF CLARK )

Scott Sells, being duly sworn, states that he has supervised the preparation of the responses of East Kentucky Power Cooperative, Inc. to the Attorney General’s Supplemental Data Requests in the above-referenced case dated April 9, 2020, and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.



Subscribed and sworn before me on this 8<sup>th</sup> day of May, 2020.



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**CERTIFICATE**

**STATE OF KENTUCKY    )**  
**)**  
**COUNTY OF CLARK     )**

Tom Stachnik being duly sworn, states that he has supervised the preparation of the responses of East Kentucky Power Cooperative, Inc. to the Attorney General’s Supplemental Data Requests in the above-referenced case dated April 9, 2020, and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.



Subscribed and sworn before me on this 8<sup>th</sup> day of May, 2020.



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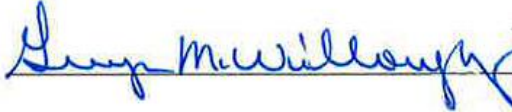
**CERTIFICATE**

**STATE OF KENTUCKY )**  
**)**  
**COUNTY OF CLARK )**

Julia J. Tucker, being duly sworn, states that she has supervised the preparation of the responses of East Kentucky Power Cooperative, Inc. to the Attorney General’s Supplemental Data Requests in the above-referenced case dated April 9, 2020, and that the matters and things set forth therein are true and accurate to the best of her knowledge, information and belief, formed after reasonable inquiry.



Subscribed and sworn before me on this 8<sup>th</sup> day of May, 2020.



Notary Public - #590567  
Commission expires - 11/30/2021

COMMONWEALTH OF KENTUCKY  
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CERTIFICATE

STATE OF KENTUCKY )  
 )  
COUNTY OF CLARK )

Mary Jane Warner, being duly sworn, states that she has supervised the preparation of the responses of East Kentucky Power Cooperative, Inc. to the Attorney General's Supplemental Data Requests in the above-referenced case dated April 9, 2020, and that the matters and things set forth therein are true and accurate to the best of her knowledge, information and belief, formed after reasonable inquiry.



Subscribed and sworn before me on this 8<sup>th</sup> day of May, 2020.



Notary Public - #590567  
Commission expires - 11/30/2021

**EAST KENTUCKY POWER COOPERATIVE, INC.**  
**PSC CASE NO. 2019-00096**

**ATTORNEY GENERAL'S SUPPLEMENTAL DATA REQUESTS DATED**  
**04/09/2020**

East Kentucky Power Cooperative, Inc. ("EKPC") hereby submits responses to the information requests of Attorney General ("AG") in this case dated April 9, 2020. Each response with its associated supportive reference materials is individually tabbed.

**EAST KENTUCKY POWER COOPERATIVE, INC.  
PSC CASE NO. 2019-00096  
SUPPLEMENTAL INFORMATION REQUEST RESPONSE**

**ATTORNEY GENERAL'S SUPPLEMENTAL DATA REQUEST DATED 04/09/2020  
REQUEST 1**

**RESPONSIBLE PERSON: Julia J. Tucker**

**COMPANY: East Kentucky Power Cooperative, Inc.**

**Request 1.** Reference the response to AG 1-2 (c). For the most recent year available, provide the member-owners' retail power sales figures to coal mining customers.

**Response 1.** As stated in Response to AG 1-2 (c), EKPC does not maintain its load data by industry. Load data is maintained by customer class. Coal mining is a portion of a much larger customer class. EKPC does not have the specific power sales figures that are requested.



**EAST KENTUCKY POWER COOPERATIVE, INC.  
PSC CASE NO. 2019-00096  
SUPPLEMENTAL INFORMATION REQUEST RESPONSE**

**ATTORNEY GENERAL'S SUPPLEMENTAL DATA REQUEST DATED 04/09/2020  
REQUEST 2**

**RESPONSIBLE PERSON: Julia J. Tucker**

**COMPANY: East Kentucky Power Cooperative, Inc.**

**Request 2.** Reference the response to AG 1-5. In the event the Company should develop a future need for additional supply side resources, based on the current IRP analysis provide a discussion regarding whether such a resource could or would be a self-built supply side resource, or whether the additional energy could or would be derived via a PPA. Include in your discussion whether the new resource:

**Request 2a.** Could or would be renewable, or fossil-fueled;

**Response 2a.** Once EKPC defines a need for additional capacity and/or energy resources, it solicits proposals via a Request for Proposals ("RFP"). That RFP could be as broad as accepting proposals for any type of generation resource in any location by any acceptable bidder. If EKPC has a self-build option that is to be considered, EKPC will submit a bid into the RFP process. Personnel associated with submitting the self-build bid will be isolated from the personnel associated with the RFP bid analysis to ensure no bias

favoring the EKPC self-build proposal. The RFP could be as specific as wanting a certain type of generation (renewable, fossil, peaking, base, etc.). EKPC has no specific need yet identified, so there is no basis to indicate what type of generation would be solicited. In general, EKPC solicits a very broad base of proposals so as to evaluate all options when seeking new generation resources.

**Request 2b.** Could or would be located inside or outside its service territory. With regard to resources outside its territory, explain how congestion or the risk of congestion could affect the cost and benefits in determining resource decisions.

**Response 2b.** As stated in Response 2a., no specifics have been identified but in general, EKPC seeks a broad response to its RFPs, so a resource could be located anywhere. The total cost for each proposal would be considered. Congestion risks and costs are a part of the total cost analysis. This method should place all alternatives on a consistent analytical basis. The congestion costs / risks would be based on the difference in nodal prices at the location of the resource as compared to prices for energy at the EKPC load zone. Historic congestion pricing would be evaluated and utilized to estimate future congestion pricing.

**EAST KENTUCKY POWER COOPERATIVE, INC.  
PSC CASE NO. 2019-00096  
SUPPLEMENTAL INFORMATION REQUEST RESPONSE**

**SUPPLEMENTAL INFORMATION REQUEST RESPONSE**

**REQUEST 3**

**RESPONSIBLE PERSON:**           **Julia J. Tucker**

**COMPANY:**                       **East Kentucky Power Cooperative, Inc.**

**Request 3.**                   Reference the response to AG 1-7. The response did not address the question posed. Provide a relevant response.

**Response 3.**               EKPC's modeling is based on detailed production cost modeling, not screening models. The referenced modeling for renewable and fossil generation comparisons is for a generalized screening level comparison. EKPC's modeling is much more detailed than either of the methodologies in the referenced report. EKPC does not use either approach referenced in the EIA report. EKPC models each specific resource, both renewable and fossil resources, and compares the total system cost of each alternative.

**EAST KENTUCKY POWER COOPERATIVE, INC.**  
**PSC CASE NO. 2019-00096**  
**SUPPLEMENTAL INFORMATION REQUEST RESPONSE**

**ATTORNEY GENERAL'S SUPPLEMENTAL DATA REQUEST DATED 04/09/2020**  
**REQUEST 4**

**RESPONSIBLE PERSONS:**           **Julia J. Tucker**

**COMPANY:**                           **East Kentucky Power Cooperative, Inc.**

**Request 4.**                   Reference the responses to AG 1-9 (a) and AG 1-9 (b). The responses failed to address the question posed. Provide a relevant response.

**Response 4.**               Regarding AG 1- 9 (a), the year-over-year inflation factor was [REDACTED] as shown on page 177 in Section 10.0 of the IRP report. The discount rate used was [REDACTED] also shown on page 177 of the IRP report.

Regarding AG 1-9 (b), as new environmental regulations are developed, EKPC evaluates and considers what, if any, additional equipment and/or costs will be incurred based on the regulation. If those costs are substantial, then EKPC completes an extensive evaluation of its future costs as compared to alternative sources for power to comply with the regulation. Based on the results of that analysis, EKPC will either seek to retrofit the unit to meet regulations or it will seek alternative resources. These analyses are brought before the Commission in a regulatory filing seeking approval for the proposed actions. EKPC's addition of the environmental controls at its Cooper

Station and most recently, its compliance changes at Spurlock Station, have all been approved by the Commission based on the alternatives available and the economic analyses completed. EKPC is not aware of additional new regulations that would cause substantial retrofit expenses beyond what has already been approved by the Commission to date. Therefore, all known costs to maintain the units as currently modified with approved retrofits are included in EKPC's operations and maintenance expenses that are part of the financial data provided in Section 10.0 of the IRP report.

**EAST KENTUCKY POWER COOPERATIVE, INC.**  
**PSC CASE NO. 2019-00096**  
**SUPPLEMENTAL INFORMATION REQUEST RESPONSE**

**ATTORNEY GENERAL'S SUPPLEMENTAL DATA REQUEST DATED 04/09/2020**  
**REQUEST 5**

**RESPONSIBLE PERSON:**           **Julia J. Tucker**

**COMPANY:**                       **East Kentucky Power Cooperative, Inc.**

**Request 5.**                   Reference the response to AG 1-20. Explain why the response failed to provide data for 2019.

**Response 5.**               The following table represents EKPC's off-system sales in both MWh and total fuel costs associated with the sales which were excluded from the Fuel Adjustment Clause (FAC).

<b>Year</b>	<b>Off System Sales (MWh)</b>	<b>Fuel Credited to FAC</b>
2017	37,157.00	\$ 986,028.44
2018	74,669.00	\$ 2,106,535.60
2019	94,626.00	\$ 2,369,618.00

The data in the table for 2019 in the response to AG 1-20 was cut off inadvertently.

**EAST KENTUCKY POWER COOPERATIVE, INC.  
PSC CASE NO. 2019-00096  
SUPPLEMENTAL INFORMATION REQUEST RESPONSE**

**ATTORNEY GENERAL'S SUPPLEMENTAL DATA REQUEST DATED 04/09/2020  
REQUEST 6**

**RESPONSIBLE PERSON: Julia J. Tucker**

**COMPANY: East Kentucky Power Cooperative, Inc.**

**Request 6.** Reference the response to AG 1-25. If the work plan applicable to 2020-2021 is available, provide a copy. If not, explain when it will be available. Explain also why the work plan for 2018-2019 was available in December of 2017.

**Response 6.** The work plan is developed at the end of the year prior to the load forecast development. RUS requires the prior year approval for the following year use. The work plan defines the methodology to be used in the next load forecast. The work plan for the 2020 load forecast is available and is provided on pages 2 through 16 of this response.



A Touchstone Energy Cooperative 

# 2021-2035 Load Forecast Work Plan

Prepared by  
Load Forecasting Department

December 2019



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## Overview

The Rural Utilities Service (“RUS”) requires East Kentucky Power Cooperative, Inc., (“EKPC”) to maintain a load forecast approved by the EKPC Board of Directors (“Board”) and RUS. The Code of Federal Regulations, Title 7 – Agriculture, Part 1710, Subpart E specifies the requirements for the load forecasts. EKPC has developed a Load Forecast Work Plan (“Plan”) that details the scope, personnel and computer resources, data and software needed to develop the 2020 Load Forecast due to RUS December 2020. To ensure all of the RUS requirements are met, the Plan will be followed to produce the 15-year load forecasts for each of the 16 Owner-Members and develop the EKPC system load forecast.

The purpose of the *Load Forecast Work Plan* is to:

- Ensure EKPC and its Owner-Members comply with federal regulations related to load forecasts (7 CFR §1710 Subpart E).
- Provide a detailed scope of the methodology and processes to be followed in developing the load forecasts for the 2021 to 2035 planning period.

The Board approved the last such plan in December 2017 for use in 2018.

EKPC is electing the filing option specified in 7 CFR §1710.204(a) (2), therefore, the entire process described herein will repeat on a 2-year cycle. This ensures the Owner-Members and EKPC have up-to-date, approved load forecasts for their planning purposes. EKPC and the Owner-Members will use the resulting forecasts for long-term planning, including construction work plans, financial forecasts, transmission, generation, and demand-side management planning.

There is close collaboration between EKPC and its Owner-Members. EKPC will prepare a preliminary load forecast for each Owner-Member and meet with each to discuss the assumptions and the resulting forecast. Owner-Member personnel present at the meetings include the President/CEO and other key staff. Based on the discussions, revisions will be made, if needed. Owner-Members have access to information not available to EKPC or they may elect to use assumptions different from preliminary forecast assumptions. Input from Owner-Members includes industrial development, subdivision growth, and other specific service area information.

Consumers and energy will be modeled for each class reported on the RUS Form 7. EKPC's sales to Owner-Members are the sum of total retail sales and distribution losses. EKPC's total requirements are estimated by adding transmission losses to sales to members. Seasonal peak demands are based on appliance and class load shapes on a normal weather peak day.

Both parties have significant input into the load forecast process and both use the results for planning and decision making. The forecasts resulting from this partnership reflect a combination of a structured forecast methodology combined with judgment and experience of Owner-Member staff.

## Timeline

- Winter 2019 / Spring 2020: The 2020 Residential Energy Use Survey will be conducted.
- Spring 2020: Other input data will be updated, and the models will be developed to produce a draft load forecast.
- Summer / Fall 2020: EKPC staff will develop a load forecast presentation that outlines the assumptions and the results to be presented during the visits with Owner-Members. Revisions will be made as needed.
- Fall / Winter 2020: The Management and Boards of Directors of the Owner-Members and EKPC will review and approve the final load forecast.
- December 2020: EKPC will submit the required documentation to the RUS Energy Forecasting Branch Chief for approval.
- Ongoing: EKPC staff will update the models periodically in order to identify any material changes that may warrant an update to the approved load forecast.
- December 2021: EKPC will submit an updated load forecast work plan to RUS.

## Economic Forecasts by Owner-Member

A critical driver of the load forecasts is the regional economic outlook. EKPC has divided its Owner-Members' service area into seven economic regions based on service territorial boundaries and natural regions that exist within the EKPC territory. For example, the Central region fits closely within the Lexington Metropolitan Statistical Area (MSA). The Bureau of

Economic Analysis defines MSAs as areas of interrelated economic activity that go beyond a single county's boundaries. The coal mining industry, albeit declining, has dominated EKPC's eastern region historically. The Northern region includes Kentucky counties that border Cincinnati. The Southern region is influenced by tourism. The Louisville metropolitan area influences the West Central region. Finally, services and retail trade dominate the northeastern region. Models for these regions provide EKPC with a way of linking the electricity needs of a service area to the rest of the economy in a consistent and reasonable manner.

IHS Global Insight (IHS) is a firm that collects county-level historical data, models the data, and provides projections for key variables including: population, income, employment levels, wages, labor force, and unemployment rate. There are economists, assigned to Kentucky, who provide additional data or insights, as needed. Population forecasts are used to project residential class consumers. Regional household income is used to project residential energy sales. Regional economic activity is used to project small commercial energy sales.

Relating the regional data to the individual Owner-Member is a challenge due to the fact that service area boundaries do not correspond exactly to county boundaries used by IHS to produce the forecasts. To address this issue, EKPC uses the following method for each Owner-Member:

1. Aggregate the IHS Global Insight forecasts for the counties in a region. The most populous counties, such as Jefferson and Fayette, will be removed as these counties are served predominantly by investor-owned utilities. This will prevent these counties' economic conditions from unduly influencing the weighted aggregate economic indices.
2. Based upon analysis from the Residential Energy Use Survey, determine the appropriate portion of residential accounts that are actual residences versus those that are barns, seasonal buildings or other non-residence type accounts.
3. Create a weighted aggregate of the IHS Global Insight forecasts for the counties each Owner-Member serves using the share of the county's land area.
4. Calculate the ratio of population density of each Owner-Member relative to the population density of its weighted aggregate.
5. Forecast this relative population density ratio with a regression model using population density and time among the explanatory variables.

6. Apply the forecasted relative population density ratio to the weighted aggregate data to obtain adjusted economic indices.

## Forecasts by Consumer Class

To comply with the requirements of 7 CFR §1710.205(b) (3), EKPC must forecast the number of consumers and energy usage by consumer class on an annual basis. The class forecasts are developed using a series of models and calculations within a statistically-adjusted end-use modeling framework.

### Residential Class

Residential consumers are analyzed by means of regression analysis with resulting coefficients used to prepare consumer projections. Regressions for residential consumers are typically a function of regional economic and demographic variables. Different explanatory variables are used for Owner-Members in order to account for regional differences in local economies.

Two variables that are very significant for these regressions are the numbers of households by county in each economic region and the percent of total households served by the Owner-Member.

<b>Model Inputs</b>	<b>Source</b>
<i>Population</i>	IHS Global Insight database
<i>Households</i> - The number of households by county	IHS Global Insight database
<i>Share</i> – The percent of the region's households served by Owner-Member	RUS Form 7
<i>Employment</i> - Regional employment levels by SIC Code	IHS Global Insight database
<i>Income</i> – Regional income levels	IHS Global Insight database
<b>Model Outputs</b>	<b>Use of</b>
<i>Residential Consumers</i>	Residential consumers are input into the residential sales model.

Energy sales are forecasted using a statistically adjusted end-use (SAE) model. This method of modeling incorporates end-use forecasts and can be used to separate the monthly and annual forecasts into end-use components. SAE models offer the structure of end-use models while also taking advantage of the strength of time-series analysis.

This method requires detailed information about appliance saturation, appliance use, appliance efficiencies, household characteristics, weather characteristics, and demographic and economic information. The SAE approach segments the average household use into end-use components as follows:

$$\text{Use}_{y,m} = \text{Heat}_{y,m} + \text{Cool}_{y,m} + \text{Water Heat}_{y,m} + \text{Other}_{y,m}$$

Where, y=year, m=month

Each component is defined in terms of its end-use structure. For example, the cool index may be defined as a function of appliance saturation, efficiency of the appliance, and usage of the appliance. Annual end-use indices and a usage variable are constructed and used to develop a variable to be used in least squares regression in the model. These variables are constructed for heating, cooling, water heating, and an 'Other' variable, which includes lighting and other miscellaneous usages.

$$\text{CoolIndex}_y = \sum_{\text{Type}} \text{Wgt}^{\text{Type}} * \frac{\left( \frac{\text{CoolShare}_y^{\text{Type}}}{\text{CoolShare}_{98}^{\text{Type}}} \right) \left( \frac{\text{Eff}_y^{\text{Type}}}{\text{Eff}_{98}^{\text{Type}}} \right)}$$

$$\text{CoolUse}_{y,m} = \left( \frac{\text{CDD}_{y,m}}{\text{NormCDD}} \right) * \left( \frac{\text{HHSize}_y}{\text{HHSize}_{by}} \right) * \left( \frac{\text{Income}_y}{\text{Income}_{by}} \right) * \left( \frac{\text{Price}_{y,m}^{-0.30}}{\text{Price}_{by}} \right)$$

Where, by=base year

$$\text{Cool}_{y,m} = \text{CoolIndex}_y * \text{CoolUse}_{y,m}$$

The Cool, Heat, Water Heat, and Other variables are then used in a least squares regression which results in estimates for annual and monthly use per household.

Features of EKPC's SAE model are as follows:

- Over 20 years of Residential Energy Use Survey historical data are used to forecast saturation of appliances.
- Appliance efficiencies due to government regulation have been accounted for using a standard roll-in method, where new households and existing households in the market for new appliances encounter more efficient units. Indices pertaining to appliance efficiency trends and usage are used to construct energy models based on heating, cooling, water heating and other energy for the residential class. Source: Energy Information Administration Annual Energy Outlook, East South Central region representing Kentucky.
- Forecasted demand response, distributed generation and energy efficiency impacts due to owner-member programs are accounted for using Owner-Member insight as well as planned budget funds. Additionally, rooftop solar and electric vehicle ownership are being closely monitored and forecasts incorporated.
- Various demographic and socioeconomic factors that affect appliance choice and appliance use are present in the methodology. These include the changing shares of urban and rural consumers relative to total consumers, number of people living in the household, as well as square footage of the house and the thermal integrity of the house.

Every two to three years since 1981, EKPC has surveyed the member systems' residential consumers. The survey will be conducted first quarter of 2020. Appliance ownership of survey respondents are analyzed in order to project future appliance saturations and to better understand electricity consumption.

### **Small Commercial Class**

This class is analyzed by means of regression analysis, and the resulting coefficients are used to prepare sales and consumer forecasts. The sales regression consists of total small commercial sales as a function of price, weather, and some measure of the local or national economy. The consumer regression consists of small commercial consumers as a function of residential consumers, the unemployment rate, and time. Different explanatory variables are used for member systems in order to account for regional differences in local area economies. For

example, small commercial sales in some territories are heavily influenced by the oil and gas industry, while other areas are more affected by retail stores.

This class is a challenge to forecast due to the relative heterogeneity of the consumers.

Consumers in this class cover a wide range of electric use such as small mines, quarries, churches, schools, retail stores, large farm operations, and others. Additionally, this class has numerous reclassifications in the historical data which complicates the analysis.

### **Large Commercial / Industrial Sales Model**

Unlike the small commercial class, no regression equations are used in the analysis and forecast for this class. Since there are so few large commercial and industrial consumers, use of regression to study the past history would reflect individual plant production or expansion decisions and not necessarily responses to economic conditions. EKPC and its Owner-Members have a two-part method for making projections in this class: existing consumer forecasts and forecasts of new consumers.

Forecasts of Existing Consumers: These projections are made directly by Owner-Members since they are in regular contact with the consumers. Each Owner-Member prepares a three-year projection of each consumer whose monthly demand exceeds 1 MW. Load forecasts beyond the three-year horizon for existing large commercial consumers are either fixed at the third year level or are adjusted based on information shared at the load forecast meeting.

Forecasts of New Consumers: In the short-term, two to three years, Owner-Members have been informed by individual consumers of planned large load additions. Due to normal construction lead times, the ability to predict additions in the near term is strong. Beyond the three year horizon, a regression technique is used to forecast new large commercial consumers. Because there are so few consumers in this class, analysis is initially done at the EKPC level to forecast total new consumers. These new consumers are then allocated to the member systems using a probabilistic model which provides an analytical basis for locating large loads on the EKPC system. The model is spreadsheet based using @RISK. The model distributes new large commercial consumers to Owner-Members based on their regional economic outlook, share of county served and historical growth.



Once the number of new large commercial consumers is determined, energy projections are based on the assumption that new large commercial consumers have the same characteristics as the average of existing large commercial consumers, a peak load of 1.8 MW with a 70 percent load factor. This methodology for forecasting new large commercial consumers and energy provides a defensible projection at the member system level.

### **Residential Seasonal, Public Street and Highway Lighting, Other Public Authorities Classes**

Some Owner-Members report seasonal sales, street light sales and sales to public authorities as separate classes while others include these consumers in the residential or small commercial classes. EKPC's approach to modeling these classes is the same for each Owner-Member. Consumer and energy equations are developed using the related economic and member specific variables.

### **Forecasts of Own Use and Losses**

For EKPC and each Owner-Member, future own use is assumed to be the average of recent historical own use, unless there is a planned renovation or expansion.

While there is no formal modeling process in loss analysis, Owner-Members provide input into the projected distribution loss assumption such as any right-of-way programs, which may reduce losses, and details concerning direct-served large commercial consumers, consumers with no distribution line. Using the average of recent years as a starting point, the Owner-Member will account for any planned upgrades for the projection. Transmission losses are projected similarly using recent history as a proxy.

### **Peak Model**

EKPC's peak demand forecast is a bottom-up approach. The Owner-Members' peaks are summed to determine the EKPC peak. Model inputs include annual energy by end-use for the residential class and total energy use for small and large commercial. Model outputs are hourly demand for winter peak day and summer peak day. Weather sensitive appliance demands reflect typical peak day temperature profiles. The resulting peaks are explicitly linked to energy projections. Load factor is an input to the forecast. The load factors used are derived from data collected in the EKPC Load Research Program, historical data, as well as industry trends.

## Scenario Analyses

High and low scenarios are developed using the same tools and methodology previously described. The assumptions for each case include:

Low Case – Pessimistic economic assumptions with mild weather resulting in lower loads

Base Case - Most probable economics assumptions with normal weather

High Case – Optimistic economic assumptions with extreme weather resulting in higher loads

Adjusting the following assumptions leads to different consumer forecasts which in turn results in different energy forecasts:

*Weather:* based on historical heating and cooling degree day data, alternate weather projections are developed based upon the 90<sup>th</sup> and 10<sup>th</sup> percentile to reflect extreme and mild weather, respectively.

*Electric price:* The general approach is to use price forecasts that are available and use the growth rates from those forecasts to prepare the high and low growth rates around the growth patterns for the base case residential price forecast. The manner in which the price of electricity will change in the future is primarily a function of how prices change for the underlying fixed and variable components of electricity rates.

*Residential consumers:* The basic approach to preparing high and low case scenarios for the future number of residential consumers is to determine the magnitude of variation in the past between long term average growth rates and higher or lower growth rates during shorter periods of time. First, the data on the historic monthly household counts for the previous 20 year period is prepared. Next, the compound annual growth rate in households is calculated for each rolling ten year. This produced a set of twelve compound annual growth rate values each representing a unique ten year span. Maximum and minimum values are determined. The highest growth is used to prepare the high case scenario, while the 10 year period that experienced the lowest growth is used to prepare the low case scenario.

These resulting adjustments are applied to the 20 year compound annual growth rate in the base case consumer count forecast to produce the high case and low

case compound annual growth rate forecast scenarios. This relationship is preserved when preparing the monthly consumer counts for the high and low case scenarios.

## Software

EKPC will use the following for data manipulation and modeling:

- Itron MetrixND will be used for regression analyses of consumers, energy and demand for each RUS class. MetrixND enables the use of a set of models, including linear regression and artificial neural networks, within a framework specifically built for load forecasting. The input datasets will reside in Microsoft Excel.
- Itron MetrixLT will be used to develop hourly data based upon the monthly forecasts from MetrixND and calibrated to historical hourly data.
- SAS, a statistical software package, will be used for data manipulation and analyses.
- Microsoft Office will be used for the creation of reports and presentations.

## Data

EKPC maintains SAS and Excel datasets containing information from the following sources:

- EKPC Itron MV-90 database: hourly load data for each Owner-Member and wholesale rate
- EKPC EMS database: hourly EKPC system load data
- Residential Energy Use Survey data: a survey conducted every 2-3 years since 1981, designed to satisfy the requirements of 7 CFR §1710.209(g) by collecting data from a representative sample of residential consumers from each Owner-Member
- RUS Financial and Operating Report – Electric Distribution (formerly RUS Form 7): annual customer class-level and aggregate data by Owner-Member; monthly data provided by Owner-Members
- IHS Global Insight: observed and forecasted annual economic data for all counties in the state of Kentucky, as well as the aggregate
- Energy Information Administration (EIA):
  - Annual Energy Outlook: observed and forecasted electricity usage by end use, consumer class, and Census Division, for a variety of economic and public policy scenarios, obtained via <http://www.eia.gov/forecasts/aeo/>

- Short-Term Energy Outlook: observed and forecasted monthly electricity usage by consumer class and Census Division, obtained <http://www.eia.gov/forecasts/steo/>
- Energy efficiency trends and projections
- NOAA National Climatic Data Center: climate normal for weather stations in or near the service areas of EKPC's Owner-Members
- DTN: observed and forecasted hourly weather for weather stations in or near the service areas of EKPC's Owner-Members.

## Personnel

The load forecasting function is in EKPC's Load Forecasting Department in the Power Supply Business Unit. Key contributors include:

- David Crews is the Senior Vice President of Power Supply and will maintain executive authority and direction for the load forecast.
- Julia Tucker is the Director of Power Supply Planning, and will provide strategic oversight as well as management support of load forecast development.
- Sally Witt, Manager of Load Forecasting, will direct and support all aspects of the 2020 Load Forecast process.
- Jacob Watson, Load Forecasting Analyst, will participate in the data development, modeling, and reporting of the forecasts.
- Sandy Mollenkopf, Senior Load Forecasting Analyst, will provide support for the load forecast process in areas of data collection, specifically, saturation survey data, load research data, and RUS Form 7 data.
- Scott Drake, Manager of Corporate Technical Services, will provide demand side management programs' impact on energy and peak demands for inclusion into the system forecast.

The Owner-Member personnel involved may include:

- President and Chief Executive Officer,
- Vice President of Finance,

- Vice President of Engineering and Operations, and
- Other key staff as selected by each Owner-Member.

### **RUS Required Deliverables**

- A formal report documenting the systems results must include:
  - Executive Summary
  - Description of the Cooperative
  - Description of the Load Forecast Methodology and Assumptions
  - Regional Economic Model
  - Analyses and Results by Class
  - Scenarios
- Owner-Member Load Forecast Reports (CD)
- Board of Directors Resolutions (CD)
- Data, Models, Assumptions (CD)
- Hourly Results (CD).



Rural Development

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DEC 12 2019

Mr. Anthony S. Campbell  
President & CEO  
East Kentucky Power Cooperative, Inc.  
P. O. Box 707  
Winchester, Kentucky 40392-0707

Dear Mr. Campbell:

We have reviewed the 2020 Load Forecast Work Plan for East Kentucky Power Cooperative, Inc. (East Kentucky), and its members. It was submitted to the Rural Utilities Service on December 2, 2019.

The work plan establishes the resources, methods, schedules, and milestones to be used in the preparation and maintenance of the load forecast for East Kentucky and its members. East Kentucky and its member systems are required to follow the work plan in preparing their respective load forecasts. According to the regulation (7 CFR 1710), a work plan may cover a period for up to 3 years. The work plan submitted will cover the forecast to be submitted in 2020.

This letter documents approval of the 2020 Load Forecast Work Plan for East Kentucky Power Cooperative, Inc. Please provide a copy of this letter to each of your members for their records.

Sincerely,

ARTHUR GILE  
Branch Chief  
Post Loan Services Engineering Branch  
Office of Portfolio Management and Risk Assessment

**EAST KENTUCKY POWER COOPERATIVE, INC.  
PSC CASE NO. 2019-00096  
SUPPLEMENTAL INFORMATION REQUEST RESPONSE**

**ATTORNEY GENERAL'S SUPPLEMENTAL DATA REQUEST DATED 04/09/2020  
REQUEST 7**

**RESPONSIBLE PERSON: Julia J. Tucker**

**COMPANY: East Kentucky Power Cooperative, Inc.**

**Request 7.** Reference the response to AG 1-25, at page 9 of the attached work plan, § 3.3.2. Explain when the next survey of the member systems' residential customers will be taken.

**Response 7.** EKPC is currently conducting the residential customer survey. It is expected to be complete by Fall 2020.

**EAST KENTUCKY POWER COOPERATIVE, INC.  
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**ATTORNEY GENERAL'S SUPPLEMENTAL DATA REQUEST DATED 04/09/2020  
REQUEST 8**

**RESPONSIBLE PERSON: Julia J. Tucker**

**COMPANY: East Kentucky Power Cooperative, Inc.**

**Request 8.** Explain when the data upon which the load forecast utilized in the instant IRP is premised was: (i) collected; (ii) analyzed; and (iii) approved by the EKPC Board of Directors.

**Response 8.** (i) The owner-member class sales, demand data, and weather data are collected each month on an on-going basis. The economic data from IHS Global Insight was received in the Fall of 2017.

(ii) The analyses and model development occurred April 2018 through June 2018. After meeting with each owner member, which took place May through August 2018, additional analyses were conducted if needed based upon new information collected during the meetings.

(iii) The load forecast was approved by the EKPC Board of Directors in December 2018 and by RUS in February 2019.



**EAST KENTUCKY POWER COOPERATIVE, INC.  
PSC CASE NO. 2019-00096  
SUPPLEMENTAL INFORMATION REQUEST RESPONSE**

**ATTORNEY GENERAL'S SUPPLEMENTAL DATA REQUEST DATED 04/09/2020  
REQUEST 9**

**RESPONSIBLE PERSON: Julia J. Tucker**

**COMPANY: East Kentucky Power Cooperative, Inc.**

**Request 9.** Explain whether any of the data upon which the load forecast utilized in the instant IRP is premised was utilized in the Company's last IRP filing.

**Response 9.** The load forecast utilizes long term history and trends, as well as updated recent information. The history prior to 2015 was utilized in the load forecast that was included in the 2015 IRP filing. That same history was utilized in the load forecast included in the 2019 IRP filing.

**EAST KENTUCKY POWER COOPERATIVE, INC.**  
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**ATTORNEY GENERAL'S SUPPLEMENTAL DATA REQUEST DATED 04/09/2020**  
**REQUEST 10**

**RESPONSIBLE PERSON:** Ken Bickham/Tom Stachnik

**COMPANY:** East Kentucky Power Cooperative, Inc.

**Request 10.** Reference the response to AG 1-34, Table 34-1. Provide a breakdown of what portion of the projected costs will be collected in rates charged to the members, and what portions (if any) will be collected through EKPC's OATT.

**Response 10.** Please refer to revised Table 34.1 which is provided on page 4 of this response. The revised Table 34.1 shows that approximately 29 percent of the listed projects are substation related and 71 percent are transmission related. As the substation and transmission projects are completed and placed in service, they are accounted for in the identified accounts in accordance with the RUS Uniform System of Accounts. The actual substation costs and the actual transmission costs will be collected in rates charged to Members. It should be noted that these substation and transmission costs will not be reflected in EKPC's wholesale rates to its Members until those costs are included in a base rate case. EKPC's OATT only includes transmission-related costs. EKPC annually calculates transmission service revenue requirements based upon the prior year's account

balances in its annual FERC Form 1 plus estimated transmission project costs in the current year (year of filing updated FERC formula transmission rates).

PJM charges EKPC's Members based upon their peak load contribution in the PJM footprint and simultaneously credits EKPC's Members for the transmission revenue requirements based upon EKPC's FERC formula Network Integration Service ("NITS") and Point-to-Point ("PTP") rates. The net effect of the charges and credits is essentially zero. Thus, EKPC's Members pay for transmission service only once, through bundled rates charged via Commission-approved wholesale tariffs. Only non-EKPC transmission loads pay for their obligations through annual NITS and PTP rates.

Because the recovery of transmission costs through the OATT is dependent on peak loads and the corresponding NITS and PTP rates, EKPC cannot reasonably estimate how much of the transmission project costs shown on revised Table 34.1 will be collected through the OATT from non-EKPC transmission loads.

**Request 10a.** Given that over \$130 million in transmission costs is projected over the next four years, explain when EKPC expects to file its next jurisdictional base rate case.

**Response 10a.** At this point in time, EKPC does not know when it will file its next base rate case.

**Request 10b.** Confirm that EKPC has not conducted any cost-benefit analyses regarding the transmission projects identified in its responses to this question.

**Response 10b.** Confirmed. As EKPC pointed out in its original response to the AGs First DR, transmission projects typically do not have quantifiable financial benefits. EKPC identifies the need for these projects due to reliability or system capacity issues, so it doesn't usually see any cost savings or payback that it can quantify.

Project Description	Project Status	Infrastructure Classification (New or Replacement of Existing)	Forecasted In-Service Date	Estimated Cost	Type of Facility	Estimated Substation Cost	Estimated Transmission Cost	Account
Construct a new North Sharkey 138-25 kV, 18/24/30 MVA distribution substation and associated 138 kV tap line (0.5 mile) from the existing Sharkey substation	Under Construction	New	6/15/2020	\$3,575,000	Line & Substation	\$2,725,000	\$850,000	Sub = 362000, Tap = 355000/356000
Rebuild the KU Elizabethtown-Kargle/Tharp 69 kV double-circuit line section (1.4 miles) using 954 MCM ACSR conductor.	Engineering & Procurement	Replacement	7/1/2020	\$2,350,000	Line	\$0	\$2,350,000	Tap = 355000/356000
Construct a new South Marion County Industrial 161-13.8 kV, 30/40/50 MVA distribution substation and associated 161 kV tap line (0.25 mile) from the existing Marion County Industrial substation	Engineering & Procurement	New	11/2/2020	\$6,000,000	Line & Substation	\$5,640,000	\$360,000	Sub = 362000, Tap = 355000/356000
Rebuild and upgrade the existing Lancaster 69-12.5 kV, 11.2/14 MVA distribution substation to 12/16/20 MVA, including a rebuild of the 69 kV tap line (1.8 miles)	Engineering & Procurement	Both	11/17/2020	\$3,500,000	Line & Substation	\$2,000,000	\$1,500,000	Sub = 362000, Tap = 355000/356000
Construct a new 69 kV line section from the Bekaert distribution substation to a new 69 kV LGE/KU switching station (West Shelby) using 556 MCM ACSR/TW (2.0 miles)	Engineering & Procurement	New	11/27/2020	\$8,990,000	Line & Substation	\$7,335,000	\$1,655,000	Sub = 362000, Tap = 355000/356000
Install a 161 kV circuit switcher on the 161-69 kV autotransformer and install a 161 kV breaker on the TVA tie line at Summer Shade substation	Under Construction	New	12/1/2020	\$3,980,000	Substation	\$0	\$3,980,000	Switching Station = 353000/356000
Rebuild the existing Hope-Hillsboro 69 kV line sections (20.6 miles) using 556.5 MCM ACSR/TW conductor.	Under Construction	Replacement	12/18/2020	\$10,580,000	Line	\$0	\$10,580,000	Tap = 355000/356000
Construct a new Monticello 69 kV switching station. Rebuild the existing 3/0 ACSR Monticello-Homestead 69 kV line section (1.3 miles) using 556.5 MCM ACSR/TW conductor	Engineering & Procurement	Both	1/7/2021	\$5,980,000	Line & Substation	\$0	\$5,980,000	Switching Station = 353000/355000/356000
Rebuild the existing Grants Lick-Griffin Junction 69 kV line sections (5.8 miles) using 556.5 MCM ACSR/TW conductor.	Preliminary Engineering	Replacement	6/17/2021	\$2,490,000	Line	\$0	\$2,490,000	Tap = 355000/356000
Rebuild the existing 2/0 ACSR Elizabethtown-Nelson County 69 kV line sections (14.5 miles) using 556.5 MCM ACSR/TW conductor.	Under Construction	Replacement	11/2/2021	\$7,240,000	Line	\$0	\$7,240,000	Tap = 355000/356000
Construct a new Broughtontown 69-25 kV, 12/16/20 MVA distribution substation and associated 69 kV tap line (7.4 miles) tapping the EKPC Highland-Tommy Gooch 69 kV line section	Engineering & Procurement	New	12/1/2021	\$9,245,000	Line & Substation	\$1,795,000	\$7,450,000	Sub = 362000, Tap = 355000/356000
Construct a new Patriot Parkway (Rineyville Junction) 69 kV switching station	Preliminary Engineering	New	12/30/2021	\$3,105,000	Line & Substation	\$0	\$3,105,000	Switching Station = 353000
Reconductor the existing 4/0 ACSR Boone-Williamstown 69 kV line sections (28.5 miles) using 556.5 MCM ACSR/TW conductor.	Preliminary Engineering	Replacement	9/22/2022	\$6,950,000	Line	\$0	\$6,950,000	Tap = 355000/356000
Construct a new Mineola Pike 138-12.5 kV, 12/16/20 MVA substation and associated 138 kV tap line (0.9 mile) to connect to the DEOK 138 kV Constance substation.	Preliminary Engineering	New	11/28/2022	\$10,565,000	Line & Substation	\$8,365,000	\$2,200,000	Sub = 362000, Tap = 355000/356000
Construct a new Griffin 138-12.5 kV, 12/16/20 MVA distribution substation and associated 138 kV tap line (3.6 miles), tapping the Stanley Parker-Spurlock 138 kV line. Retire the existing Griffin 69 kV tap line and distribution substation.	Preliminary Engineering	Both	6/29/2023	\$7,425,000	Line & Substation	\$2,925,000	\$4,500,000	Sub = 362000, Tap = 355000/356000
Rebuild the existing 3/0 ACSR McCreary County Junction-KU Wofford 69 kV line sections (20.7 miles) using 556.5 MCM ACSR/TW conductor.	Preliminary Engineering	Replacement	1/29/2024	\$14,300,000	Line	\$0	\$14,300,000	Tap = 355000/356000
<b>Total Estimated Expenditures</b>				<b>\$106,275,000</b>		<b>\$30,785,000</b>	<b>\$75,490,000</b>	

**EAST KENTUCKY POWER COOPERATIVE, INC.**  
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**SUPPLEMENTAL INFORMATION REQUEST RESPONSE**

**ATTORNEY GENERAL'S SUPPLEMENTAL DATA REQUEST DATED 04/09/2020**  
**REQUEST 11**

**RESPONSIBLE PERSON:** Scott Sells

**COMPANY:** East Kentucky Power Cooperative, Inc.

**Request 11.** Reference the response to AG 1-35. Explain whether EKPC has considered utilizing dynamic transmission line ratings (DLR)<sup>1</sup> for lines prone to heating and/or thermal violations.

**Response 11.** The referenced U.S. Department of Energy report on DLR includes ambient adjusted ratings (“AAR”) as a form of DLR. EKPC currently uses AAR on all transmission lines and has done preliminary development of real-time AAR for use in transmission operations. EKPC has not considered other forms of DLR.

**Request 11a.** Explain further whether use of DLR: (i) would or could lead to cost savings; and (ii) would be authorized by PJM, and if so, whether any other transmission owners in the PJM footprint utilize DLR.

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<sup>1</sup> See, e.g., the 2019 U.S. Department of Energy report at the following link:  
[https://www.energy.gov/sites/prod/files/2019/08/f66/Congressional\\_DLR\\_Report\\_June2019\\_final\\_508\\_0.pdf](https://www.energy.gov/sites/prod/files/2019/08/f66/Congressional_DLR_Report_June2019_final_508_0.pdf)

**Response 11a.** (i) EKPC has not performed studies to determine whether use of DLR would or could lead to cost savings. Theoretically, in order for DLRs to lead to cost savings, there would need to be sufficient enough congestion on the transmission system for DLRs to mitigate that would save more than it would cost to develop, design, deploy, implement and maintain the DLR technology in real-time operations. EKPC does not believe it owns any transmission lines currently congested enough to achieve savings significant enough to offset the cost to develop and implement further use of DLR beyond AAR.

(ii) EKPC expects that PJM would authorize use of DLRs, although EKPC has not approached PJM for an opinion. Since PJM is the NERC registered Transmission Operator for EKPC, it would be entirely PJM's decision. EKPC is not aware of any transmission owners in the PJM footprint that have implemented DLR for use in real-time transmission operations, other than AAR.

**Request 11b.** Explain whether EKPC has conducted any studies regarding the potential for DLR to reduce congestion costs. If so, provide all such studies.

**Response 11b.** EKPC has not conducted any studies regarding the potential for DLR to reduce congestion costs.

**Request 11c.** Explain whether utilizing DLR could reduce the projected costs of the Company's supplemental transmission projects as set forth in response to AG 1-34.

**Response 11c.** Utilizing DLR would not reduce the costs of EKPC's supplemental transmission projects identified in response to AG 1-34. The drivers for these supplemental transmission projects are discussed in response AG 1-34, but do not include mitigating thermal limitations. If DLR were proposed as a solution for any of these projects, other drivers still exist that DLR would not mitigate, leading to still implementing the planned supplemental transmission projects.

**Request 11d.** Explain whether EKPC has considered filing a CPCN for a pilot program to investigate the usefulness of DLR in its supplemental transmission. If not, why not?

**Response 11d.** EKPC has not considered filing a CPCN for a pilot program to investigate the usefulness of DLR in its supplemental transmission projects as most EKPC supplemental project drivers would not be addressed by DLR (as discussed in Response 11c and the response to AG 1-34). DLRs may provide an alternative to economically driven projects (with a goal to implement savings in operational timeframes), but cannot substitute for long-term transmission planning reliability needs to plan for worst case peak loading conditions.



**Request 11d(i).** Explain further whether PJM permission would have to be obtained for such a pilot, even if used on supplemental projects.

**Response 11d(i).** If a DLR pilot were performed, and the DLRs were actually to be used for transmission operations, PJM would have to be involved in the pilot project and approve the use of ratings in real-time, since PJM is the NERC registered Transmission Operator for EKPC. PJM would need to make accommodations to receive the DLRs from EKPC and apply them to the PJM energy management system in real-time, so PJM could monitor the real-time and post-contingent flows on the line compared to the DLR to maintain reliability of the transmission system.

**EAST KENTUCKY POWER COOPERATIVE, INC.  
PSC CASE NO. 2019-00096  
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**ATTORNEY GENERAL'S SUPPLEMENTAL DATA REQUEST DATED 04/09/2020  
REQUEST 12**

**RESPONSIBLE PERSON:** Mary Jane Warner

**COMPANY:** East Kentucky Power Cooperative, Inc.

**Request 12.** Reference the response to AG 1-36. Provide an estimate of the costs EKPC's members will bear with regard to both identified projects, and what costs other transmission owners will bear.

**Response 12.** Given that neither of the two new interconnection projects discussed in the referenced response are eligible for regional cost allocation within PJM, the EKPC load zone is responsible for all of these costs. Therefore, all EKPC transmission customers (i.e., EKPC owner-members, LG&E/KU, Duke Energy Ohio-Kentucky, and City of Falmouth) will be responsible for the costs of these projects. Because EKPC owner-members represent a substantial majority of total load served from the EKPC transmission system (approximately 95%), these costs will be recovered primarily through rates to owner-members. EKPC will recover the remaining small portion of the costs of the projects through its FERC-approved transmission formula rate, which is charged to the other EKPC transmission customers.

**EAST KENTUCKY POWER COOPERATIVE, INC.  
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**ATTORNEY GENERAL'S SUPPLEMENTAL DATA REQUEST DATED 04/09/2020  
REQUEST 13**

**RESPONSIBLE PERSON:**                   **Craig Johnson/Mark Brewer**

**COMPANY:**                               **East Kentucky Power Cooperative, Inc.**

**Request 13.**                   Explain whether EKPC utilizes beneficial reuse of coal ash and coal combustion byproducts.

**Response 13.**                   EKPC has provided bottom ash to local counties for use by their county road departments for road treatment during snowy and icy conditions. And, EKPC utilizes fly ash from its Spurlock Units 1 & 2 in the construction of its Coal Combustion Residual (“CCR”) Landfill as protective cover over a geocomposite drainage layer. Fly ash is approved for this use by Kentucky’s Division of Waste Management. EKPC sold Spurlock’s Unit 1 & 2 fly ash for beneficial reuse as a cement supplement to the ready-mix industry but halted such sales in early 2019 due to safety issues related to construction activities associated with EKPC’s CCR/ELG work currently ongoing at Spurlock.

**Request 13a.** If so, explain how this beneficial reuse occurs and the benefits EKPC's members receive.

**Response 13a.** The sale or donation of any CCR offsets EKPC's operating costs, while the donation of bottom ash is a benefit to our local counties. This also provides an indirect benefit to EKPC's owner-members as they provide services in those counties.

Fly ash from EKPC's Spurlock Units 1 & 2 is hauled from the silos and placed in a two-foot lift as a protective layer over top of the geocomposite drainage layer. Doing this allows EKPC owner-members to benefit from the cost savings associated with the avoidance of having to purchase and haul sand or other suitable cover materials.

EKPC suspended fly ash sales from Spurlock due to the ongoing construction activities associated with the CCR/ELG project. Prior to the suspension, fly ash sales as a cement supplement benefited EKPC's owner-members by lowering operating costs.

**Request 13b.** In addition to any current reuse, explain if EKPC has pursued any potential reuse opportunities, and if so, provide the details of those opportunities.

**Response 13b.** EKPC is currently not pursuing any reuse opportunities.

**Request 13c.** If EKPC has not pursued any reuse opportunities, explain why EKPC has not done so.

**Response 13c.** Due to safety issues associated with bulk-hauling trucks traveling to and from EKPC's Spurlock Station silos, which are located in the middle of major construction activities associated with the CCR/ELG project, ash sales were placed on hold until the project is completed next year. In addition, there is currently no fly ash from Spurlock Units 1 & 2 silos available for sale due to EKPC's need for this ash as cover material for its latest Spurlock landfill cell construction. Fly ash from Spurlock Units 1 and 2 will be integral in the disposal of wastewater produced by the new ELG equipment now being installed. The wastewater from the new ELG wastewater treatment system will be used to wet the fly ash prior to landfilling. It is estimated that all of the fly ash EKPC produces will be needed in the process of wastewater disposal. EKPC will market any fly ash from Spurlock Units 1 and 2 that is available after the completion of the wastewater treatment system. CCR materials from Spurlock Units 3 and 4 are not suitable as a cement supplement or as an anti-skid material. The gypsum byproduct from the operation of the Units 1 and 2 flue gas scrubbers is not suitable for use in the production of wallboard.

The two units at Cooper Power Station are typically on reserve standby and do not produce enough ash for sales. As a result, beneficial ash users have not shown an interest due to the need for a reliable consistent source of ash.

**EAST KENTUCKY POWER COOPERATIVE, INC.  
PSC CASE NO. 2019-00096  
SUPPLEMENTAL INFORMATION REQUEST RESPONSE**

**ATTORNEY GENERAL'S SUPPLEMENTAL DATA REQUEST DATED 04/09/2020  
REQUEST 14**

**RESPONSIBLE PERSON: Mark Horn**

**COMPANY: East Kentucky Power Cooperative, Inc.**

**Request 14.** Confirm that based on recent trade publications, EKPC has announced it is reducing coal purchases by 20%. If confirmed, explain whether this is due to any changes in the Company's load forecast.

**Response 14.** This reduction in coal purchases, which is expected to be applicable during the 2020 spring shoulder months, was exercised to manage the physical inventory of coal at Spurlock Station, and not due to a change in the load forecast.

**EAST KENTUCKY POWER COOPERATIVE, INC.**  
**PSC CASE NO. 2019-00096**  
**SUPPLEMENTAL INFORMATION REQUEST RESPONSE**

**ATTORNEY GENERAL'S SUPPLEMENTAL DATA REQUEST DATED 04/09/2020**  
**REQUEST 15**

**RESPONSIBLE PERSON:**            **Julia J. Tucker/Mary Jane Warner**  
**COMPANY:**                        **East Kentucky Power Cooperative, Inc.**

**Request 15.**                        Reference the applications filed in Case Nos. 2020-00040<sup>2</sup> and 2020-00043.<sup>3</sup>

**Request 15a.**                        Confirm that both the proposed Turkey Creek and Glover Creek Merchant Solar facilities, if fully approved, will be located on land adjacent to EKPC transmission lines. If so confirmed, identify those transmission lines.

**Response 15a.**                        The developer of the referenced solar facilities has indicated to EKPC and PJM that those facilities will be located in close proximity to EKPC transmission lines. The developer has made formal requests to interconnect with those EKPC transmission lines through the PJM generation interconnection process.

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<sup>2</sup> In Re: Application Of Turkey Creek Solar, LLC For a Construction Certificate to Construct a Merchant Electric Generating Facility Garrard County, Kentucky, before The Kentucky State Board on Electric Generation and Transmission Siting, Case No. 2020-00040 [hereinafter: Turkey Creek Merchant Solar facility].

<sup>3</sup> In Re: Application of Glover Creek Solar, LLC, for a Construction Certificate to Construct a Merchant Electric Generating Facility, before The Kentucky State Board on Electric Generation and Transmission Siting, Case No. 2020-00043 [hereinafter: Glover Creek Merchant Solar facility].

The Turkey Creek Solar project developer has requested to interconnect with EKPC's Garrard County-Tommy Gooch 69 kV line section at a location approximately 0.4 mile from EKPC's Garrard County substation.

The Glover Creek solar project developer has requested to interconnect with EKPC's Summer Shade-Patton Road Junction 69 kV line section at a location approximately 1.7 miles from EKPC's Summer Shade substation.

**Request 15b.** Explain to what extent EKPC will have to construct new facilities to interconnect with both the Turkey Creek and Glover Creek facilities.

**Response 15b.** For the Turkey Creek Solar facility, EKPC will need to construct a new 69 kV switching substation at the point of interconnection between the developer-owned equipment and EKPC's 69 kV transmission line. No other new EKPC facilities will be required to accommodate this interconnection. However, EKPC has identified the need to install overhead optical ground wire for communications purposes on the existing transmission line between the new substation and the existing Garrard County substation (total distance of 0.4 mile).

For the Glover Creek Solar facility, EKPC will need to construct a new 69 kV switching substation at the point of interconnection between the developer-owned equipment and EKPC's 69 kV transmission line. No other new EKPC facilities will be required to accommodate this interconnection. However, EKPC has identified the



need to install overhead optical ground wire for communications purposes on the existing transmission line between the new substation and the existing Summer Shade substation (total distance of 1.7 miles). Also, EKPC has identified the need to upgrade the maximum conductor operating temperature of the Edmonton Junction-Knob Lick 69 kV line section (5.7 miles) to accommodate the increased power flows on that line caused by the proposed solar facility.

**Request 15c.** Provide projections of the costs necessary to construct those facilities, and explain whether EKPC's members would have to pay any portion of those costs.

**Response 15c.** EKPC's conceptual-level cost estimate for the new facilities and upgrades necessary to accommodate interconnection of the Turkey Creek Solar facility is \$3,530,000. EKPC's conceptual-level cost estimate for the new facilities and upgrades necessary to accommodate interconnection of the Glover Creek Solar facility is \$7,135,000. These cost estimates are currently based on EKPC's general experience. EKPC is preparing to begin a more detailed engineering analysis for these projects to refine these cost estimates.

The project developer is responsible for all costs necessary for interconnection of its project to the EKPC system, so none of these costs would be passed along to EKPC's owner-member distribution cooperatives. PJM administers the process

for interconnecting to the transmission grid and its procedures and requirements are designed to assure that EKPC and other transmission owners are reimbursed for the cost of interconnections.

**Request 15d.** Explain whether the proposed Turkey Creek and Glover Creek facilities will in any manner impact EKPC's members' distribution costs, for example in substations. If so, provide projections of the costs necessary to construct those facilities, and explain whether EKPC's members would have to pay any portion of those costs.

**Response 15d.** Neither solar facility will have any impact on EKPC owner-member costs. No new distribution facilities or upgrades of existing distribution facilities are required due to these solar facilities.

**Request 15e.** Explain whether EKPC intends to purchase any of the power that would be produced from the proposed Turkey Creek and/ or Glover Creek Merchant Solar facilities. If so, explain why EKPC did not discuss the purchase of such power in the instant docket.

**Response 15e.** EKPC does not have current plans or agreements to purchase any of the power produced by either facility.

**Request 15f.** If EKPC does purchase power from the proposed Turkey Creek and/or Glover Creek Merchant Solar facilities, explain whether such purchases would be governed by The Public Utility Regulatory Policies Act of 1978 (PURPA).<sup>4</sup>

**Response 15f.** EKPC does not have current plans or agreements to purchase any of the power produced by either facility. On September 7, 2017, the Federal Energy Regulatory Commission ("FERC") issued an Order in FERC Docket No. QM17-5-000, which involved EKPC's request to terminate its obligation under FERC regulation 18 C.F.R. 292.303(a) to enter into new power purchase contracts to purchase electric energy and capacity from qualifying facilities ("QF") with a net capacity greater than 20 MW. FERC ordered that EKPC would not be required to purchase energy and capacity from QFs with a net capacity greater than 20 MW. Both of the referenced facilities are planned to be greater than 20 MW, therefore, EKPC would not be obligated to purchase the power under the PURPA rules.

**Request 15g.** Provide a detailed explanation and discussion regarding how the potential purchases of power from the proposed Turkey Creek and/or Glover Creek Merchant Solar facilities would affect EKPC's current order of economic dispatch. Additionally, provide copies of all reports and/or studies EKPC may have conducted in this same regard.

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<sup>4</sup> 16 U.S.C. § 2601 et seq.

(i) Include in your discussion an explanation of whether the additional power to be carried on EKPC's system will cause the company to incur any additional costs, including but not limited to O&M and transmission congestion, with regard to both its transmission and generation systems.

(ii) Explain whether any current or planned RTEP or supplemental transmission projects are designed to deal with the additional power that the proposed merchant solar projects will place onto EKPC's transmission system. If so: (a) identify the projects and provide either electronic links or copies of all documents pertaining to all such projects; and (b) explain whether the proposed merchant solar projects will be required to pay any of the costs associated with all such projects.

(iii) Explain whether the proposed merchant solar facilities will or could have an impact on the LG&E-KU transmission system, as identified in the PJM "Generation Interconnection Feasibility Study Report for Queue Project AE2-071" attached to the application in Case No. 2020-00043, at p. 13.

**Response 15g.** (i) EKPC does not have plans to purchase power from either project, therefore, there will be no impact to the EKPC economic order of dispatch. No additional costs are expected to be incurred by EKPC due to the generation produced by either project.

(ii) No current or planned RTEP projects other than those described in Response 15b above are needed to accommodate the changes in power flows caused by these solar facilities. EKPC does not expect to implement any supplemental transmission projects due to these solar facilities.

(iii) LG&E-KU has notified the developer that no impacts were identified on the LG&E-KU transmission system due to either of these solar facilities.

**Request 15h.** Has EKPC entered into any agreements with either Glover Creek or Turkey Creek? If so, provide copies. If not, explain whether EKPC anticipates entering into any such agreements, and if so, describe the nature of the agreements.

**Response 15h.** EKPC has not entered into any agreements to purchase power from either facility. EKPC will issue a Request for Proposals (“RFP”) prior to entering into any long term purchased power agreement. Results of that RFP and the proposed agreement(s) would be presented to the Commission in an appropriate filing to request approval for such an agreement. From a transmission standpoint, the answer is also no, EKPC has not entered into any agreements with either Glover Creek or Turkey Creek.